

Exhibit 5

Underachievement and Learning Disabilities in Children Who Are Gifted

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Introduction: Children who are classified as gifted are, by definition, highly intelligent individuals who fall at the upper end of the distribution of mental ability. Yet giftedness is not a guarantee of academic success. Consider that The National Commission on Excellence in Education (1983) reported that one half of gifted students do not achieve academically at a level that is commensurate with their ability. Surprisingly, between ten and twenty percent of high school dropouts test within the gifted range (Lajoie and Shore, 1981; Whitmore, 1980). Perhaps the most startling statistic in this regard is that 40 percent of those who graduate within the top 5% of their high school classes do not complete college. A number of famous historical figures who were clearly very intelligent (and who probably who have qualified as gifted) struggled considerably in school; these individuals later became highly successful in fields ranging from politics (Woodrow Wilson and Nelson Rockefeller) to science (Albert Einstein and Thomas Edison) to the arts (Auguste Rodin and Cher). There are many possible reasons for this lack of academic success among some of the gifted population. Environmental factors (both within the school and at home), emotional and affective issues, motivational difficulties, and other factors all can contribute to a lack of academic success in students whom would, by virtue of their high level of mental ability, be expected to be high achievers. Another important factor that can result in underachievement academically, and the one that I will be discussing in this article, is the presence of learning disabilities. It comes as a surprise to many people to hear that learning disabilities are as prevalent in the gifted population as in the general population, yet there is nothing in the definition of learning disabilities (or in their diagnosis) to preclude the gifted from this category. Rather, this misconception that gifted children cannot have learning disabilities is, I believe, rooted in the erroneous belief that learning disabilities are in some way restricted to those children who are less bright than average. In fact (as I will expand upon later), children with learning disabilities are by definition of at least average mental ability. Their problem is one of lowered achievement, not lowered ability. In this article I will discuss various definitions of learning disabilities, the diagnostic process, various manifestations of learning disabilities across the school-age range, and appropriate interventions for children with learning disabilities. I will also briefly discuss Attention-Deficit Hyperactivity Disorder (ADHD) which, while not a learning disability, often co-occurs with learning disabilities and also frequently manifests itself in ways that are quite similar to learning disabilities. While some of what I will say is characteristic of all children with learning disabilities, I will also attempt to highlight some issues that are particularly relevant to children within the gifted population who have learning disabilities.

The Definition of Learning Disabilities: The term learning disabilities was first coined in 1963 by Samuel Kirk, but many other terms that were used prior to this time to describe children with learning problems that are now termed learning disabilities. Formulating a single definition of learning disabilities that is acceptable to all professionals in the field has proven difficult. As a result, several definitions are commonly utilized; these differ to some degree but generally have the same essential characteristics. The most commonly used definition first appeared in Public Law 94-142, the Education for All Handicapped Children Act (Federal Register, 1977). It was also a part of Public Law 101-476, the 1990 Individuals with Disabilities Education Act (IDEA) and is also a component of the 1997 Amendments to IDEA, Public Law 105-17. It reads as follows: The term "specific learning disability" means those children who have a disorder in one or more of the basic psychological process involved in understanding or using language, spoken or written, which disorder may manifest itself in imperfect ability to listen, think, speak, read, write, spell or perform mathematical computations. The term includes such conditions as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia and developmental aphasia. The term does not include a learning problem which is primarily the result of visual, hearing, or motor handicaps, of mental retardation, of emotional disturbance, or environmental, cultural, or economic disadvantage (PL 105-17: Federal Register, 1997). This definition of learning disabilities (and associated features of the Federal law that contains it) is important for several reasons. First, it was designed to provide an operational definition of learning disabilities that can be used by professionals to diagnose learning disabilities in a consistent, reliable manner. Second, other aspects of the law provided legal safeguards to assure that children with learning disabilities were provided with appropriate accommodations to remediate their disabilities. Third, it provided a system of checks and balances under which parents of children with learning disabilities could appeal any decisions made about the services that their children would (or would not) receive. I will not go into a detailed discussion of all aspects of Federal Law as it relates to

children with learning disabilities, but I do want to elaborate upon the basic components of the definition provided above. There are multiple dimensions to the definition, each of which must be considered in determining whether a child should be diagnosed with learning disabilities. The following major concepts are essential parts of IDEA 1997: --The child must have a disorder in one or more of the basic psychological processes. These processes refer to cognitive abilities, among them memory (auditory and visual), perception (auditory and visual), intersensory integration (for example visual-auditory intersensory integration, the ability to associate a letter or letters with its appropriate sound(s)), attention, and motor skills, among many others. --The child must have difficulty in learning, manifesting itself in oral language (receptive or expressive), reading, writing, and/or mathematics. That is, their achievement is less than would be expected given their ability. --The learning problem is not attributable to being primarily due to other causes such as visual or auditory impairment, severe motor handicaps, low mental ability, emotional disturbance, or disadvantage due to economic situation, environment, or culture. In other words, there is no other logical explanation for the child's learning difficulties. --A significant discrepancy exists between the child's potential for learning (ability) and his or her actual achievement. That is, underachievement is evident. Be aware that different states and individual school districts differ in the size of the discrepancy that is needed for "significance". Also there are different methods for calculating a discrepancy that go beyond the scope of this article. Note that this definition excludes from the diagnosis of learning disabled many children who are not achieving at a level that is commensurate with their ability: those who possess low levels of mental ability and who would therefore not be expected to achieve at age- or grade-appropriate levels; those who have other problems that are adversely impacting learning (e.g., vision impairment, depression or anxiety, cerebral palsy, and those who have not had an adequate opportunity to learn, among others); and those whose discrepancy between ability and achievement is not large enough to be considered significant in the clinical sense. Also, there must be some explanation as to why the child is underachieving; this is obtained by establishing a connection between the area of underachievement (e.g., mathematics) and a psychological process known to underlie mathematical competency (e.g., auditory memory). This definition, or one quite similar to it, is used by the vast majority of school systems in the United States to qualify children for learning disability services. Consider this example of the implications of the diagnosis for gifted children. A boy, Lucas, with an intelligence quotient (IQ) of 140 (at the 99th percentile for his age) would be expected to achieve at a level that is commensurate with that ability (i.e., that is, at or near the 99th percentile). Let's say that Lucas is not achieving at this level in an area (reading). For the sake of this example, assume that Lucas' achievement on several reading decoding (word recognition) measures places him in the middle of the average range (i.e., a standard score of 100, corresponding to the 50th percentile). Despite the fact that Lucas is decoding at a grade appropriate level, by virtually any definition of a learning disability he is underachieving due to the significant mismatch between his ability and his achievement in reading. This points out an essential (and to many people, very confusing) feature of learning disabilities: among bright children, achievement at a level that is below grade level is not required for a diagnosis of learning disabilities to apply. In fact, if we were to change Lucas' decoding standard score to 110 (corresponding to the 75th percentile), he would still qualify for the diagnosis even though his decoding skills are above those of 75 per cent of his same-grade peers. This type of scenario occurs very often with gifted underachievers, and confusion about it almost certainly results in them often not receiving the diagnosis and associated appropriate services to which they are legally entitled. Thus, it is often the case that parents need to aggressively pursue testing for the gifted child, since teachers and school administrators frequently may believe that there is no need for an evaluation to be conducted (because the child is performing at grade level). In extreme cases, it may be necessary to seek the assistance of a special education advocate or attorney in order to convince a school district of the need for beginning the diagnostic process. Because evidence indicates that early intervention results in the best long-term prognosis, it is important to attempt to determine whether services are warranted when the child is as young as possible.

The Evaluation Process: Once a child is determined to qualify for testing, the evaluation process can begin. It is often a time consuming and labor intensive process. If the evaluation is being conducted by the child's school, often the first step in the process is a screening--the administration of a battery of tests that determine whether there appears to be a need for a more complete diagnostic evaluation to be conducted. Typically a screening requires no more than three to four hours of total testing time, and provides an estimate of the child's ability along with measures of the child's achievement in the relevant areas. If the decision to continue with a complete diagnostic evaluation is made, and additional five or more hours of testing will generally be conducted. These tests typically will provide a more precise measure of the child's ability, more achievement measures, and a much more detailed look at the processes underlying learning. Observations of the child's behavior during testing, an examination of his or her use of strategies in problem solving situations, and the child's attentional capacity are also important components of the diagnostic process. Furthermore, one or both parents will typically be interviewed to provide a detailed birth, medical, developmental, social, and academic

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history of the child. An interview with the child's classroom teacher and observation of the child in the classroom environment may also be included in the assessment process. The evaluation process can often take weeks or even months to complete when conducted within the school setting. Frequently a child will be tested only for brief periods at a time (e.g., a class period), meaning that a large number of testing sessions are needed to complete the process. Despite the fact that Federal law guarantees each child the right to a timely evaluation to determine whether there is a need for services, it is often the case (especially with gifted children, since their difficulties may be masked by their brightness) that school personnel are reluctant to initiate the process. In this event, parents may need to step in and advocate as strongly as they can for an evaluation. A reminder to a school psychologist that Federal law is on the child's side in these matters may be necessary in order to get the assessment process started. Still, it may be the case that the district does not agree to conduct an evaluation; in this case, a parent's only remaining option may be to seek a private evaluation (at the parent's expense). Private evaluations are essentially the same as those conducted within the school setting, except that they can usually be completed in a more timely manner due to fewer scheduling issues. A number of different types of professionals conduct learning disabilities evaluations, including learning disabilities specialists, school psychologists, and clinical psychologists. These individuals may work in private practice, or in a university or hospital clinic setting. Be advised that because of the time-intensive nature, private evaluations are expensive; in the Chicago area, for example, the cost ranges from about \$1000 to well over \$2000. Insurance may pay for all or part of the cost of an evaluation; it is best to check with the company before beginning the process because different insurers have varying requirements for co-payment.

Types of Learning Disabilities: Learning disabilities affect anywhere from four to seven percent of school-age children (in 1995-1996, 5.5% of a school children in the United States received learning disabilities services (U.S. Department of Education, 1998)) and can manifest themselves in many different ways. Moreover, the ways in which a learning disability affects a child often change as the child progresses through school. This is in part due to the maturing child changing in the ways they process information and in part due to the changing demands of the school curriculum. The most common type of learning disability results in underachievement in reading (typically decoding), which also frequently results in written language difficulties (especially in spelling). Other children experience significant underachievement only in areas requiring mathematical calculation. Still others experience a combination of reading, writing, and mathematics difficulties. For some children, difficulties in oral language (receptive and or expressive) underlie their learning disability, while some children have intact oral language skills. **A relatively new category of learning disability, nonverbal learning disabilities, is being increasingly diagnosed. Children with nonverbal learning disabilities experience difficulties in areas such as motor skills, visual-spatial orientation, social relationships, organization, and aspects of mathematics, while they are often quite strong in areas requiring verbal abilities.** Gifted children with learning disabilities often experience difficulties that are qualitatively different than those experienced by their non-gifted learning disabled peers. By virtue of their high level of mental ability, they are often able to perform surprisingly well on tasks that allow them to utilize this strength. For example, a gifted child who is experiencing significant difficulties in decoding while reading may actually be capable of comprehending what is read deceptively well, since he or she is able to utilize strong conceptualization and reasoning skills and a rich fund of general knowledge to make sense out of the material. Unless this child is asked to read aloud, it might not even be apparent that there is a problem in the area of decoding. As another example, a gifted child with significant difficulties in arithmetic computation might possess good underlying mathematical concepts (e.g., a solid understanding of place value) and might also be able to apply this conceptual understanding to a variety of "everyday" mathematical activities such as time and money concepts, reading charts, tables and figures, and utilizing good estimation skills. Given that there is a large emphasis on computational skills (especially in the early grades), these areas of strength may go largely unrecognized. Often a learning disability is not "pure", in the sense that it can be neatly categorized as belonging to a particular category or subtype. Rather, frequently the manifestations of a child's learning disability include those typically seen in two or more subtypes. For example, many children experience underachievement in reading, written language, and mathematics. Furthermore, in a number of cases, children with learning disabilities also meet the criteria for additional, co-morbid, conditions. For example, affective difficulties (e.g., depression), anxiety, and attention-deficit hyperactivity disorder, among others, are commonly diagnosed in children with learning disabilities.

What Are Appropriate Services, and What Can Parents Do to Assure that Their Children

Receive Them: There are many potential services that can be provided for children with learning disabilities. For most children with a diagnosis of learning disabilities, in-school services are provided one or more times per week. These services may be offered in a one-on-one manner in the child's classroom or in a resource room, or they may be administered in a small group setting. Typically in a

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small group setting the children are matched as closely as possible in terms of grade level and the nature of the disability. In more serious cases, the child may be placed in a self-contained classroom with other children who are all experiencing some type of learning or behavior problem. These self-contained special education classrooms are generally becoming less common as school districts increasingly attempt to provide services in the regular classroom (a process known as 'inclusion' or 'mainstreaming'). Some children also receive remedial services from trained learning disabilities professionals during after-school hours. In some instances, these after-school services are provided in lieu of interventions within the school setting. Some parents (and children) prefer the after-school remediation, feeling that it may reduce the possible stigma that can accompany leaving the child's regular classroom for special services. (My own observations suggest that this fear is often unwarranted, and that most children experience minimal trauma as a result of leaving the classroom. Keep in mind that most classrooms have at least a few children who require special education services of some type). There are also activities that are remedial in nature that can be provided within the home environment. Among this type of treatment are a variety of computer software programs that aim to strengthen deficient processes underlying learning and thus enhance academic achievement. A variety of other materials are also available, although generally I advise against a parent trying to serve as a primary provider of an intervention. Successful professionals in the field have typically have had substantial post-graduate training, and it is unrealistic for a parent to expect to be able to provide the same quality of treatment that a professional can. Additionally, I have witnessed too many instances where the parent-child relationship was seriously eroded because of stressors introduced as a result of one or both parents trying to play the role of remediator as well as mother or father. Be advised that LD services are generally required for an extended period of time. It is generally unrealistic to expect significant improvement in achievement to occur as a result of a few weeks or months of intervention, no matter how appropriate and intensive this intervention might be. Although high intelligence generally is associated with a better prognosis for children with learning disabilities, the remedial process is still a time-consuming process. Typically diagnostic re-evaluations are conducted every two to three years to assess the change that has occurred and possibly identify new areas of remedial emphasis for the future. Communication is an important aspect of the remedial process. Those individuals who are working with the child (i.e., the classroom teacher, LD specialist within the school, private practitioner, and so on) should be in communication with each other on a regular basis to guarantee that the services being provided are appropriate and not overlapping to a significant degree. Parents should be assertive in stating their expectations regarding services. Keep in mind, special education services are costly and school districts are typically not eager to provide such services. Those parents who attend school staffings, maintain regular contact with school personnel, and indicate that they will be seeking the services to which they are entitled by law typically are more successful in receiving the appropriate interventions for their children. As I mentioned previously, it behooves parents to be aware of the rights that are guaranteed them under Federal law. In meeting with parents during conferences, I always stress the role of parental education. By that I mean that parents should take it upon themselves to learn as much as they can about the disabilities that their child possesses. While it is not realistic to become an expert in the field, there are many books, videotapes, and other materials available that are oriented towards increasing parents' understanding of learning disabilities and what can be done to appropriately service children with learning disabilities. Today, most national bookstore chains have entire sections devoted to special education in general and learning disabilities in particular. Many of these materials are oriented towards laypersons who lack professional training in the field. Additionally, professional organizations such as the Learning Disabilities Association of America (LDA) and the International Dyslexia Society (IDA) offer publications and hold national and regional meetings, with much of the content aimed at the parents of children with learning disabilities. There is also an organization, Parents of Gifted and Talented Learning-Disabled Children (301-986-1422), that is specifically oriented to provide information to parents of children who are "doubly exceptional". The Internet also can be a valuable source of information for many parents, although my personal experience has been that there is also considerable misinformation disseminated via the various forums that the Internet provides. In other words, let the consumer beware when "surfing the web".

Attention Deficit Hyperactivity Disorder: Approximately one-quarter to one-third of all children with learning disabilities also qualify for the diagnosis of attention deficit hyperactivity disorder (ADHD). Additionally, ADHD manifests itself in ways that are often difficult to distinguish from learning disabilities. As a result, most evaluations for learning disabilities will also include at least a consideration that ADHD is a viable diagnosis as well. ADHD manifests itself in several ways; the behaviors most commonly associated with ADHD include inattention, hyperactivity, and impulsivity. Under the current conceptualization of the disorder, some children display primarily hyperactive and impulsive symptoms, while others show mostly difficulties in focusing and maintaining attention. Still others with ADHD display a combination of hyperactive/impulsive and inattentive behaviors. ADHD does not in and of itself result in academic underachievement. However, like a learning disability,

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ADHD often results in children performing at a level that is below that at which they are capable. One of the hallmarks of the disorder is inconsistency in performance; that is, a child with ADHD may be able to perform at a high level on a particular task on one day, yet show a much poorer level of performance on an essentially identical task shortly thereafter. As a result of this inconsistent performance, many children with ADHD are erroneously labeled as unmotivated, lazy or uncaring. Like children with learning disabilities, many children with ADHD possess a number of strengths; as with children with learning disabilities, these strengths often go unrecognized and/or underappreciated. Moreover, many of the characteristics of children with ADHD are compatible with giftedness: these children are often energetic, creative, and excel at tasks requiring divergent thinking. In fact, there have been suggestions that the high energy level and high intensity characteristic of gifted children may at times result in them be inappropriately diagnosed with ADHD, while their giftedness remains unrecognized. Furthermore, the ways in which ADHD manifests itself change as a child grows older. Typically, overactive and impulsive behaviors decrease in frequency with age, while organizational and time management problems and difficulties related to social interactions (especially with peers) become more prominent. Unlike with learning disabilities, a medical intervention for ADHD is effective in many cases. The most commonly used treatment, stimulant medication, is effective in reducing symptoms in a large majority of children who take it. Increasingly, other pharmacological treatments, including tricyclic antidepressants and antihypertensives, are being prescribed to children who either do not respond to psychostimulants or who have adverse side effects (most commonly insomnia and decreased appetite) to them. There are also a variety of psychologically based treatments for ADHD as well. Substantial evidence exists to support the idea that the combination of a pharmacological and a psychological intervention provides greater symptom reduction than either type of treatment alone. Among common psychologically oriented treatments are behavior modification and metacognitive training. Behavior modification requires the establishment of a reward system (a 'token economy') to reinforce desired behaviors (which could range from 'getting homework done in a timely manner' to 'not interrupting conversations' to 'getting ready for school in the morning without reminders or assistance'). A well planned token economy is often necessary because children with ADHD have been found to be less sensitive than their non-ADHD peers to the typical reinforcement contingencies that are a part of everyday living. Rather, children with ADHD require reinforcement that is more powerful, more frequent, and more linked in time to the desired behavior than do their non-ADHD peers. While many parents feel that establishing a token economy in the home (or school) must be a fairly simple matter, my experience has shown quite clearly that they benefit greatly from the guidance of a trained professional (e.g., a psychologist or social worker) in establishing, adjusting, and maintaining such a plan. Metacognitive training is an intervention that focuses on getting the child to think about and analyze his or her behavior, with the goal of becoming capable of recognizing problematic situations and dealing with them in an appropriate manner. Metacognitive training is particularly well suited to children who are gifted, since success rates are best with those who are highly intelligent and possess good verbal skills. Again, there are professionals who specialize exclusively in this type of intervention.

Summary: As I have described, children who are gifted are as likely to have learning disabilities or attention-deficit hyperactivity disorder as any other children. Due to some of the characteristics of gifted children (most notably their high levels of intelligence), however, gifted children often are not identified as LD or ADHD as accurately or as early in their lives as their non-gifted peers. Early diagnosis and intervention is important in reducing the difficulties that gifted children with co-occurring learning disabilities and/or attention-deficit hyperactivity disorder experience in their academic, emotional, and social lives. Parents of children who are gifted need to be aware of the criteria for inclusion for LD or ADHD and may often be required to strongly advocate for their children so that they may receive the appropriate special education services to which they are entitled under Federal law. [a for references](#)